CLAIMS

What is claimed is:

1. A method for a peripheral device to regulate its temperature by regulating its power consumption, comprising:

reducing offline diagnostic activities if the temperature of the peripheral device exceeds a first temperature;

reducing operational speed in which the peripheral device fulfills requests from a host device if the temperature of the peripheral device exceeds a second temperature; and

reducing power consumption of a physical layer interface that connects the peripheral device to the host device if the peripheral device exceeds a third temperature and if the peripheral device experienced a period of inactivity that exceeds a first time threshold.

2. The method of claim 1, wherein the first temperature is lower than the second temperature.

3. The method of claim 1, wherein the second temperature is lower than the third temperature.

4. The method of claim 1, further comprising:

further reducing power consumption of the physical layer interface if the peripheral device exceeds a fourth temperature that is higher than the third

temperature and if the peripheral device experienced a period of inactivity that exceeds a second time threshold.

5. The method of claim 4, wherein the second time threshold is longer than the first time threshold.

6. The method of claim 1, wherein the peripheral device is a hard drive.

7. The method of claim 6, wherein the method further comprises:

parking heads of the hard drive if the peripheral device exceeds a fourth temperature and if the peripheral device experienced a period of inactivity that exceeds a second time threshold.

8. The method of claim 7, wherein the second time threshold is longer than the first time threshold.

9. The method of claim 8, wherein the fourth temperature is higher than the third temperature.

10. A method for regulating temperature in a mass storage device comprising:

monitoring the temperature of the mass storage device; and

reducing power consumption when the temperature exceeds a certain threshold;

wherein the mass storage device is capable of operating while the power consumption is reduced.

11. The method of claim 10, wherein the mass storage device is a hard drive.

12. The method of claim 11, wherein the power consumption is reduced by suspending offline diagnostic activitites.

13. The method of claim 11, wherein the power consumption is reduced by reducing seek speed of the hard drive.

14. The method of claim 11, wherein:

the hard drive has a physical layer interface that connects the peripheral device to a host device,

the physical layer interface has different power modes;

the power consumption is reduced by changing the power mode of the physical layer interface.

15. The method of claim 14, wherein the power mode is changed only if a period of inactivity where the host device has not used the hard drive has elapsed.

16. The method of claim 15, wherein the power mode reverts back to its original mode when the host attempts to use the hard drive.

17. The method of claim 14, wherein the power mode is changed from active to partial.

18. The method of claim 14, wherein the power mode is changed from partial to slumber.

19. The method of claim 11, wherein the hard drive can be placed into a standby state, and wherein power consumption is reduced by placing the hard drive into thestandby state if a period of inactivity where the host device has not used the hard drive has elapsed.

20. A hard drive that autonomously manages its temperature comprising:

a hard platter that rotates;

a magnetic medium that stores information;

heads that read and write information to the magnetic medium;

an arm that holds the heads;

a temperature sensor that measures temperature;

an integrated controller that can reduce power consumption when the temperature exceeds a certain threshold, wherein the hard drive is capable of operating while the power consumption is reduced.